

## **REMARKS**

The Office Action mailed April 28, 2009 has been received and the Examiner's comments carefully reviewed. The specification has been amended. Entry of the amendment is requested. Upon entry, claims 1-2, 4-5 and 11-15 are pending in the application. Applicants respectfully submit that the pending claims are in condition for allowance.

### **Support for the Amendment:**

The specification has been amended to include the reference numeral "7" that is shown in the drawings. From a reading of the amended paragraphs, it is readily apparent that the referenced "ring shaped gap" corresponds to reference numeral "7." No new matter has been added.

### **Objections to the drawings:**

In the Office Action, the drawings are rejected for showing the reference number "7" in FIGS. 3a-7 without a corresponding description in the specification. As explained above, the specification has been amended to include the reference number 7 at the "ring shaped gap" between the resilient members. Withdrawal of the objection is requested.

### **35 U.S.C. §103(a) rejection over Litherland et al. and Amenos et al.:**

In the Office Action, claims 1-2, 4-6, 11 and 15 are rejected as being unpatentable over US Patent 6,732,944 to Litherland et al. and US Publication 2006/0011737 to Amenos et al. This rejection is traversed.

Claim 1 recites a fluid dispersion device comprising a substrate having inner and outer sections. The inner and outer sections of the substrate are coupled together only by a plurality of resilient members that extend from an inner edge of the outer section to an outer edge of the inner section.

Litherland et al. discloses in Fig. 9, 10 and 11 an aerosol generator that is constructed of a support element 112, which is used to hold a vibratable member 114 having a plurality of apertures. As shown in Fig. 10 support element 112 has a central aperture 116 across which vibratable member 114 is positioned and a circular outer periphery 118. Coupled to the support element 112 is a vibratable element 120 to vibrate vibratable member 114 when nebulizing a liquid. An isolating member 128 may be inserted about the outer periphery 118 as shown in Figs. 9 and 10. Tabs 126 are provided at the outer periphery 118 of the support element 112 to provide safe attachment of the isolating member 128 to the outer periphery 118 of support element 112.

Amenos et al. discloses a spray-head container and apparatus 100 for exterminating crawling insects. The apparatus 100 includes a diaphragm 1 that connects a housing 6 to a piezoelectric device 2. As shown in Figures 7-13 and 18, diaphragm 1 consists of a singular resilient sheet 4 which has undulations 61 of various cross-sectional shapes.

Claim 1 is not obvious over Amenos et al. and Litherland et al. because neither reference, alone or in combination, teaches or suggests the claimed invention. Claim 1 requires a plurality of resilient members extending from an outer section of a substrate to an outer edge of an inner section of the substrate. The Office Action, at page 3, concedes that Litherland et al. fails to disclose the resilient members of claim 1. To remedy the shortcomings of Litherland et al., the Office Action cites the undulations 61 (of resilient sheet 4) disclosed in Amenos et al. as teaching the recited resilient members. However, as can be clearly seen from Figures 2-13 and 18 of Amenos et al., resilient sheet 4 consists of a single, unitary piece of material and not a plurality of resilient members. Further, the Office Action provides no explanation or analysis regarding why or how one having ordinary skill in the art would, from the teachings of Amenos et al., modify the single, unitary resilient sheet 4 of Amenos et al. to create a plurality of resilient members of claim 1 that are separated by a ring shaped gap. Even so, one skilled in the art of nebulizer design would not have been able to arrive at the claimed invention from the teachings of Amenos et al. because Amenos et al. teaches a resilient sheet 4 that is too rigid for optimal use in a nebulizer application. In such an application, it is desired that the piezoelectric element oscillate as freely as possible. With the claimed invention, the plurality of resilient members

oscillate at near resonance while substantially reducing the deteriorating influence on the support of the nebulizing structure, as compared to prior art devices. See the specification at page 7, lines 7-12 and 21-34. As such, the claimed invention allows for a degree of oscillation that is not obtainable from the teachings of Amenos et al. For at least the above-cited reasons, claim 1 is not obvious over Amenos et al. and Litherland et al., or a combination thereof. Because all remaining claims depend from claim 1, they are likewise patentable. Withdrawal of the rejection is requested.

**35 U.S.C. §103(a) rejection over Litherland et al., Amenos et al. and Berglund et al.:**

In the Office Action, claims 12-14 are rejected as being unpatentable over Litherland et al., Amenos et al. and US Patent 3,790,079 to Berglund et al. This rejection is traversed.

Claim 12 depends from claim 1 and further specifies that at least one of the resilient members is adapted to carry an electric signal for the actuator. Claim 13 ultimately depends from claim 1 and further specifies that the substrate inner section is adapted to carry an electrical signal provided for a piezoelectric actuator via at least one resilient member. Claim 14 ultimately depends from claim 1 and further specifies that the substrate outer section is adapted to carry an electrical signal provided for a piezoelectric actuator via at least one resilient member.

Berglund et al. is directed to a vibrating monodisperse aerosol generator that uses a signal generator 41 to power a piezoelectric ceramic ring 73 via an electrical connection 76 to a flange 61A of flat top plate 61. Litherland et al. and Amenos et al. have been discussed previously.

As discussed above, claims 12-14 are patentable over Litherland et al. and Amenos et al. for at least the same reasons already stated in support of claim 1. Moreover, Berglund et al. fails to provide any additional teaching or suggestion that addresses the deficiencies already identified in Litherland et al. and Amenos et al. with respect to claim 1. Namely, Berglund et al. fails to teach or suggest a plurality of resilient members. Further, and as conceded in the Office Action, Litherland et al. and Amenos et al. fail to disclose a substrate that is adapted to carry an electric signal. Although Berglund et al. may disclose a flat top plate 61 constructed to carry an electric

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signal; there is no teaching or suggestion in Berglund et al. relating to carrying an electric signal across a resilient member of a substrate, as recited in claims 12-14. As such, Litherland et al., Amenos et al. and Berglund et al. cannot be combined to arrive at the device recited in claims 12-14. Therefore, claims 12-14 are not rendered obvious by a combination of Litherland et al., Amenos et al. and Berglund et al. Withdrawal of the rejection is respectfully requested.

**Conclusion:**

A speedy and favorable action in the form of a Notice of Allowance is hereby solicited. If the Examiner feels that a telephone interview may be helpful in this matter, please contact Applicant's representative at (612) 336-4728.

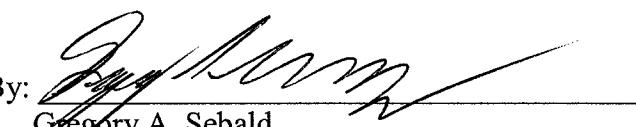
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